

(2330) Proposal to conserve the name *Tamarix ramosissima* against *T. pentandra* (*Tamaricaceae*)

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(2330) *Tamarix ramosissima* Ledeb., Fl. Altaic. 1: 424. Nov–Dec 1829, nom. cons. prop.

Lectotypus (vide Baum, Monogr. Rev. Gen. Tamarix: 45. 1966): Kazakhstan (“Kazajstan”), “*Tamarix ramosissima* Led. Herb. Acad. Petrop. Songaria chin. ad lacum Saisang-Nor.”, 1826, Politow (K barcode K000341731 [digital image!]; isolectotypi: PRC barcode PRC452672!; W barcode W0031725!).

(=) *Tamarix pentandra* Pall., Fl. Ross. 1(2): 72. 1789, nom. rej. prop. Lectotypus (vide Baum, Monogr. Rev. Gen. Tamarix: 44. 1966): “Siberia P.S. Pallas 14. d.” (BM barcode BM0000999968!).

Tamarix ramosissima Ledeb. is native to Asia, but due to its ornamental use, it is naturalized in many temperate parts of the world, such as Australia, southern Africa, and North and South America. In particular, it has been included among 100 of the “World’s Worst” Invasive Alien Species (<http://www.issg.org/database/species/search.asp?st=100ss>), and it is currently considered the second-worst invasive plant in the U.S.A. (Schaal & al. in J. Heredity 94: 197–204. 2003), where huge efforts have been made for control and eradication (Zavaleta in Ambio 29: 462–467. 2000).

Ledebour described *T. ramosissima* in 1829 from plants collected in Kazakhstan (Lake Noor Zaisan). In the protologue he did not mention *T. pentandra* Pall. or *T. pallasii* Desv. (in Ann. Sci. Nat. (Paris) 4: 349. 1824), two earlier names that apply to the same biological entity, widespread through central and western Asia. During the 19th century, most botanists combined *T. ramosissima* as a variety of *T. pallasii* (e.g., Bunge, Tent. Gen. Tamar.: 51. 1852; Boissier, Fl. Orient. 1: 773. 1867) or treated it as *T. gallica* var. *pallasii* (e.g., Thiselton Dyer in Hooker, Fl. Brit. India 1: 248. 1874). The type of *T. ramosissima* is considered to be a collection by Politow in 1826, sent to Ledebour by Gebler (cf. Baum, l.c. 1966: 44). Specimens of that collection have been seen at PRC! and W!. Baum (l.c. 1966: 45) mentioned a specimen from the Gay herbarium at K (digital image!) as holotype of *T. ramosissima*, and this must be considered as an effective lectotype designation under Art. 9.9 of the ICN (McNeill & al. in Regnum Veg. 154. 2012).

Tamarix pentandra was described by Pallas (l.c.), who mentioned no specific collection in the protologue, but, along with an

enumeration of regions and localities, cited previous references (see below) including two illustrations. Therefore, despite Baum’s (l.c. 1966: 44) statement that a specimen collected by Pallas in “Siberia” kept at BM was the holotype, it is clear that this was not “the one specimen” that Pallas used (Art. 9.1 of the ICN, McNeill & al. in Regnum Veg. 154. 2012). However, under Art. 9.9, this specimen (barcode BM0000999968!) must be considered the lectotype of *T. pentandra*. In the protologue, Pallas (l.c.) adopted the phrase name “*Tamarix floribus pentandris*” citing “*Lin. syst. pl. I. p. 739. sp. 1.*”, a reference to the first *Tamarix* species in Reichard (Syst. Pl.: 739. 1779); this is *T. gallica* L., first published in 1753 (Sp. Pl.: 270. 1753). Accordingly, *T. pentandra* was soon considered a superfluous name replacing *T. gallica* (Bieberstein, Fl. Taur.-Caucas. 1: 246. 1808; Desvaux, l.c.), a situation which has prevailed until now (cf. Baum, l.c. 1966; IPNI; Tropicos), *T. pentandra* being cited as illegitimate. Desvaux (l.c.) published *T. pallasii* for the species that Pallas had described, providing clear reference to *T. pentandra*, but renaming it, perhaps because it had by then been widely used (e.g., by Moench, Methodus: 123. 1794, and Bieberstein, l.c.) in the sense of *T. gallica*. Under the interpretation that *T. pentandra* was a replacement name for *T. gallica*, as Pallas did not indicate a type, it would be automatically typified under current rules by the type of the latter. Nevertheless, despite *T. pentandra* being considered a superfluous name for *T. gallica* and in modern terms illegitimate, it has been commonly reported as a synonym of either *T. pallasii* (Bunge, l.c. 1852: 50–51) or *T. ramosissima* (Candolle, Prodr. 3: 96. 1828; Gorskova in Komarov, Fl. URSS 15: 311. 1949; Gorskova & Shinnars in S. W. Naturalist 2: 64. 1957; Baum, l.c. 1966: 42), and only rarely of *T. gallica* (Bieberstein, l.c.), or, in the case of Moench (l.c.) as an accepted name with *T. gallica* as a synonym. However, neither Pallas’s (l.c.) reference to the “phrase name” of *T. gallica*, nor his explicit inclusion of “sp. 1.” in Reichard’s (l.c.) publication, can in our opinion be considered a “citation of the name itself”, i.e., *T. gallica* (Art. 52.2 Ex. 12). In fact, the diagnosis “*Tamarix floribus pentandris*” is quite general, and it was later used at the beginning of the protologue of other *Tamarix* species such as *T. hispida* Willd. (in Abh. Königl. Akad. Wiss. Berlin 1812–13 (Phys. Kl.): 77. 1816), *T. canariensis* Willd. (l.c.: 79) or *T. gracilis* Willd. (l.c.: 81). Moreover, at the same citation level, Pallas also included

references to Duhamel's adoption of *T. narbonensis* (Traité Arbr. Arbust. 2: 300, t. 85. 1755), an unspecific *Tamarix* drawing (Blackwell, Herb. Blackwell. 4: t. 331, fig. 2. 1754–1757 and Gmelin's (Fl. Sibir. 4: 116. 1769) treatment of *T. germanica* L. (= *Myricaria germanica* Desv.). In sum, all four references seem to contextualize the taxonomic knowledge about the genus at that time, given that *Tamarix* was only represented by *T. gallica* and *T. germanica*. Moreover, none of the criteria of Art. 52.2 is fulfilled in the case of *T. pentandra* (no types of any kind existed at that time, nor was the name itself cited), and therefore it should be considered a legitimate name. In that case, *T. pallasii* is illegitimate, as Desvaux (l.c.) made direct reference to *T. pentandra* (Art. 52.1 & 52.2e), and *T. pallasii* (the replacement name) is to be automatically typified by the type of *T. pentandra* (Art. 7.5).

Widely considered superfluous, *T. pentandra* was almost neglected in favour of *T. pallasii* during the 19th and the early 20th centuries (Candolle, l.c.; Bunge in Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 7: 294. 1851; l.c.: 49. 1852; Boissier, l.c.; Niedenzu, Gen. Tamar.: 294. 1895; Gandoger, Fl. Cret.: 38. 1916). The material upon which *T. pallasii* was based was a source of confusion through these years. Gay (in Blanche & Gaillardot, Cat. Herb. Syrie: 10. 1854) suggested that a specimen conserved in Jussieu's Herbarium (P-Jussieu!) and annotated by Desvaux, was the original material of *T. pallasii* and that it belonged to *Tamarix laxa* Willd. It belongs to a Patrin collection from "Siberia" with copies at P-Jussieu!, P-Lamarck!, G! and K, and the morphology matches *T. laxa*. Despite the evident morphological differences between the two taxa, already reflected in their original descriptions, Gay's assumption received acceptance during the 20th century, and some authors continued to synonymize *T. pallasii* to *T. laxa* (cf. Gutmann in Palestine J. Bot., Jerusalem Ser. 4: 53. 1947; Gorschkova, l.c.; Baum, l.c. 1966: 99). In fact, Baum (l.c. 1966: 99) sought to typify *T. pallasii* on that P-Jussieu! specimen mentioned by Gay (l.c.). Nevertheless, according to our argument above, Baum's typification is not acceptable since *T. pallasii* is automatically typified by the type of *T. pentandra* (Art. 7.4). Hence, *T. pallasii* must necessarily be removed from the synonymy of *T. laxa*, as has been erroneously assumed to be its position.

Tamarix pentandra being considered superfluous and *T. pallasii* synonymized under *T. laxa*, the use of *T. ramosissima* spread in the 20th Century (Gutmann, l.c.; Gorschkova, l.c.) and became consolidated worldwide after Baum's monograph (Baum, l.c. 1966), as found in the main floras published since then (Baum in Tutin &

al. (eds.), Fl. Eur. 2: 293. 1968; Cirujano in Castroviejo & al. (eds.), Fl. Iber. 3: 438. 1993; Yang & Gaskin in Wu & al., Fl. China 13: 63. 2007; Qaiser in Fl. Pakistan http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=200014313; among others) and in international databases such as The Plant List (<http://www.theplantlist.org/tpl1.1/record/kew-2520135>). The name *T. ramosissima* has been widely accepted by horticulturists, and it is used in many papers dealing with its invasive behaviour in the Americas (Cleverly & al. in Oecologia 111: 12–18. 1997; Gaskin & Schaal in Proc. Natl. Acad. Sci. U.S.A. 99: 11256–11259. 2002; Shafroth & al. in Environm. Managem. 35: 231–246. 2005; Natale & al. in Bol. Soc. Argent. Bot. 43: 137–145. 2008; Stromberg & al. in Restorat. Ecol. 17: 177–186. 2009; in J. Arid Environm. 74: 1399–1407. 2010; Brownell in Eukaryon 9: 4 pp. 2013; among others). By contrast the usage of *T. pentandra* was never general; it was first substituted by *T. pallasii* and later by *T. ramosissima*. All this, together with its supposed synonymization with *T. gallica*, left *T. pentandra* almost neglected. Only a few publications in the middle of the 20th century (Gorschkova, l.c.; Gorschkova & Shinnars, l.c.: 48) included the name either as a synonym of *T. ramosissima*, or with doubts about its identity, until Baum (l.c. 1966) appeared to have clarified that question.

As shown before, *T. pentandra* is taxonomically conspecific with and has nomenclatural priority over *T. ramosissima*. However, in the context of the taxonomic complexity of this genus, restoring *T. pentandra* over the well-known *T. ramosissima* would be confusing rather than clarifying, given the currently extended use of the latter in both its native range and those places where it is naturalized. Therefore, in order to avoid disadvantageous nomenclatural displacement of a name that has extensively been used in the last 60 years, the rules should be suspended to conserve the name *T. ramosissima* against the earlier *T. pentandra* in order to best serve stability of nomenclature.

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